Syphilitic Meningomyelitis Treated with Ceftriaxone: Case Report

Although neurosyphilis is often referred to as a tertiary or late stage of syphilitic infection, involvement of the CNS may occur at any point during the course of the infection [1]. Other than doxycycline, which penetrates the CNS, there are few therapeutic alternatives to penicillin for the treatment of neurosyphilis [2]. We describe a patient with secondary syphilis and meningomyelitis who responded to treatment with ceftriaxone. A 37-year-old, HIV-negative male presented in February 1992 with a 2-week history of progressive weakness of his lower extremities, paresthesia and numbness of both thighs, increased urinary frequency, and impotence. His history included an accelerated allergic reaction to penicillin (wheezing) in 1989, a negative VDRL (Veneral Disease Research Laboratories) test in 1982, and sexual contact with a prostitute in 1991.

On physical examination, the patient was alert. Pink rounded macules were noted on the anterior surfaces of the legs and forearms. There was bilateral asymmetric hypotonia with loss of muscular strength (grade 2); he could not walk without assistance. Unsuspected clonus, hyperreflexia of the knees and ankles, and Babinski’s sign were noted bilaterally. Sensation, including touch, pain, and proprioception, was diminished in the lower extremities. A CT of the spine was normal. Evaluation of CSF obtained on admission revealed the following values: WBC count, 540/mm³ (95% lymphocytes, 5% polymorphonuclear leukocytes); glucose level, 20 mg/dL; and protein level, 45 mg/dL. A CSF VDRL test was positive (titer, 1/2); cultures were negative. A peripheral WBC count was 15,900/mm³ with a normal differential; the blood glucose level was 79 mg/dL, and the erythrocyte sedimentation rate (ESR) was 4 mm for the first hour. A serum VDRL test was positive at a titer of 1/8 and a fluorescent antibody absorption test (FTA-ABS) was reactive.

After neurosyphilis was diagnosed, the patient was treated with ceftriaxone (1 g b.i.d. intramuscularly for 14 days) because of allergy to penicillin. He gradually recovered his muscular strength and his sensation. At the completion of therapy, evaluation of CSF revealed a WBC count of 80/mm³ (90% lymphocytes and 10% polymorphonuclear leukocytes), a glucose level of 37 mg/dL, and a protein level of 30 mg/dL; a VDRL was positive at a titer 1/2. Ten days after completion of treatment, the patient was asymptomatic. Three months later, evaluation of the CSF showed a WBC count of 2/mm³ (95% lymphocytes), a glucose level of 50 mg/dL, and a protein level of 10 mg/dL; a CSF VDRL test was negative and the serum VDRL titer was 1/2. He remains asymptomatic 3 years after treatment.

We believe our patient had secondary syphilis that affected the meninges and medulla. Syphilitic meningomyelitis comprises both syphilitic paraplegia (Erb’s paralysis) and atrophic neurosyphilis. This form of neurosyphilis is characterized by the insidious onset of asymmetrical paraparesis, dysesthesias, sphincter disturbances, and minimal back pain. Clinical signs usually include hyperreflexia, Babinski’s sign, spastic neurogenic bladder, and, occasionally, amyotrophy [3, 4]. The rapid clinical improvement and improvement in CSF parameters after treatment with ceftriaxone are an important clue for the diagnosis of neurosyphilis. Ceftriaxone achieves high serum levels, penetrates the blood-brain barrier, and inhibits Treponema pallidum at concentrations three to five times lower than does penicillin. The MIC of ceftriaxone for T. pallidum is .0006 μg/mL [5, 6].

Treatment of neurosyphilis with 1 g of ceftriaxone daily for 10 days has been associated with a substantial number of failures in HIV-infected hosts [7]. Except for a single case of asymptomatic neurosyphilis [8], to our knowledge there are no reports on the efficacy of ceftriaxone in HIV-negative individuals with symptomatic neurosyphilis. Ceftriaxone may be a good alternative to penicillin. We believe our patient had secondary syphilis that affected the meninges and medulla.

References